



2006 Partnership Award

EMCAS Software

**ADICA Consulting, LLC
Argonne National Laboratory**

Argonne National Laboratory developed the Electricity Market Complex Adaptive System (EMCAS) software to meet the need for an advanced model of electricity market evolution over time. The EMCAS software allows users to represent multiple participants with unique bidding strategies and decision processes, multiple forward markets (e.g. capacity markets, energy spot markets, etc.), the transmission system in detail sufficient to identify congestion and associated price impacts, and hourly bid-based market clearing in both day-ahead and real-time markets. The software can be used to analyze possible bidding strategies, record past events and identify similar trends as they develop, and change prevailing market rules to test the benefits and costs of different market designs.

ADICA Consulting LLC (ADICA) signed a Software License Agreement before a commercial version of the software was ready for distribution. ADICA then began marketing through an informative website, strategic alliances with other consulting groups, and international power system professionals. By the time the initial commercial version of the software was ready, ADICA had four clients ready to purchase it. ADICA has demonstrated an unusual commitment and initiative in marketing and developing the software. For example, ADICA convinced EDP Produção (an electric utility company), Rede Eléctrica Nacional (a transmission company), and DGGE (a regulatory agency) to jointly fund a \$495,000 project to model and analyze the Iberian Electricity Market. This project included a subcontract for Argonne National Laboratory to develop and integrate a hydro-electric module for EMCAS. ADICA also arranged for Argonne employees to be covered as additional assureds under ADICA's liability insurance policy and opened a line of credit to address differences in payment policies between the customers (payment after the project is completed) and the laboratory (payment in advance for the laboratory's best effort).